

a metal powder, (b) a solder powder, (c) a polymer or a monomer which is polymerisable to yield a polymer, wherein the polymer is cross-likable under the action of a chemical cross-linking agent, and (d) a chemical cross-linking agent for the polymer, the cross-linking agent having fluxing properties and being unreactive with the polymer without catalysis. The polymer will generally be an epoxy resin and the cross-linking agent will generally be a polyacid. The composition preferably is one in which the metal powder and/or solder powder generates and/or has adhered thereto a catalyst for the cross-linking agent which is liberated on application of heat.--

This "Abstract of the Disclosure" was taken from the Abstract published with the corresponding PCT patent application.

IN THE CLAIMS:

Please delete claims 20 and 23.

Please amend claims 1, 4, 6, 8, 13, 16, 18, 21, 22, 24-29, 31-35, 38, 40, 41, 43, and 45-56 as follows:

1. (amended) A composition of matter comprising:
  - (a) a metal powder,
  - (b) a solder powder which melts at a lower temperature than the metal powder,
  - (c) a polymer, or a monomer which is polymerisable to yield a polymer, [a] said polymer being crosslinkable under the action of a chemical cross-linking agent,
  - (d) a crosslinking agent for said polymer, the crosslinking agent being selected from carboxylated polymers, polycarboxylic acids and polymer fatty acids so as to provide multiple reaction sites, the crosslinking agent having fluxing properties and being nonreactive with said polymer without the application of heat and provision of a catalyst for reaction therebetween, the crosslinking agent, as such, not reacting with said

polymer under storage conditions, and the crosslinking agent being capable of solvating

(e) metallic oxide and metallic salt catalysts which are formed by heating metallic components (a) and (b) and which promote a rapid crosslinking reaction between said polymer (c) and said crosslinking agent (d) when incorporated in said polymer, as a result of solvation by the crosslinking agent in the presence of heat.

Please change claim 4 to depend from claim 1 only.

Please change claim 6 to depend from claim 1 only.

Please change claim 8 to depend from claim 1 only.

Please change claim 13 to depend from claim 1.

Please change claim 17 to depend from claim 16.

18. (amended) A composition [on, or] for application to a dielectric substrate in a predetermined pattern and comprising, in admixture:

(i) a metallic powder component which includes (a) a solder powder and (b) a metal powder melting at a higher temperature than the solder powder;

(ii) a polycarboxyl compound effective as a fluxing agent for the metallic powder component at a first temperature and as a cross-linking agent for an epoxy resin at a higher second temperature, the polycarboxyl compound being selected from carboxylated polymers, polycarboxylic acids and polymer fatty acids so as to provide multiple reaction sites, and

(iii) a [being in contact with such] epoxy resin.

19. (amended) A composition [according to claim 18 which has the epoxy resin in admixture with the metallic powder constituent and the polycarboxyl compound] comprising in admixture:

(i) a metallic powder component which includes (a) a solder powder and (b) a metal powder melting at a higher temperature than the solder powder;

*AC2*  
*Subar*  
(ii) a polycarboxyl compound effective as a fluxing agent for the metallic powder component at a first temperature and as a cross-linking agent for an epoxy resin at a higher second temperature, the polycarboxyl compound being selected from carboxylated polymers, polycarboxylic acids and polymer fatty acids so as to provide multiple reaction sites, the composition being applied to a dielectric substrate to which an epoxy resin has been pre-applied.

59242300 " 59242300"  
Please change claim 21 to depend from claim 19.  
Please change claim 22 to depend from claim 18 only.  
Please change claim 24 to depend from claim 18.  
Please change claim 25 to depend from claim 18.  
Please change claim 26 to depend from claim 18.  
Please change claim 27 to depend from claim 18 only.  
Please change claim 28 to depend from claim 18 only.  
Please change claim 29 to depend from claim 18 only.  
Please change claim 31 to depend from claim 29 only.  
Please change claim 32 to depend from claim 18 only.  
Please change claim 33 to depend from claim 18 only.  
Please change claim 34 to depend from claim 18 only.  
Please change claim 35 to depend from claim 18 only.  
Please change claim 38 to depend from claim 18 only.

*AC3*  
40. (amended) A method of making an electrically conductive circuit on a dielectric surface comprising patterning a dielectric substrate with either the [admixture of metallic powder component and polycarboxyl compound] composition as specified in claim 18 or with the composition of claim 19 with the epoxy resin being pre-coated on the substrate, [or the epoxy resin being incorporated in the patterned composition,] and heating the dielectric substrate thus patterned to a temperature above the melting point of the solder metal but below the melting point of metal powder (b), being a temperature at which the polycarboxyl compound is thermally stable but able to act as a fluxing agent to achieve

aa3 metallic sintering and catalyzed crosslinking of the epoxy resin.

In claim 41, line 1, change "is" to --has been--.

aa4 43. (amended) A method as claimed in claim 40, wherein a photoimageable layer is applied to the dielectric substrate and subsequently subjected to a photoimaging and developing process to form a channel pattern, [said admixture additionally containing the epoxy resin] the composition of claim 18 is introduced into the channel pattern and the dielectric substrate is heated to said temperature to achieve metallic sintering and substantial crosslinking of the epoxy resin.

43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100  
Please change claim 45 to depend from claim 40 only.

aa5 46. (amended) A method as claimed in claims 40 wherein the epoxy resin is applied to the entire dielectric substrate and "B" staged to produce a dry handleable substrate allowing for subsequent patterning of [said admixture to] the composition of claim 18 on said substrate.

Please change claim 47 to depend from claim 40 only.

aa6 48. (amended) A method of making a multilayered electrically conductive circuit by first applying and curing an insulating dielectric layer on a single layer electrically conductive circuit produced according to the method claimed in [any one of claims 40 to 46] claim 40 the insulating dielectric layer having vias, and forming a second electrically conductive circuit on the cured dielectric layer by the method claimed in [any one of claims 40 to 47] claim 40 and repeating these steps to form a required plurality of alternating dielectric layers and electrically conductive circuit layers.

49. (amended) A method according to claim 48, wherein said vias are filled with a metal filling resulting from